

REMARKS

This communication is a response to the aforementioned Office Action dated June 17, 2011. By this communication, claims 1, 11 and 19 are amended. Claims 2-4, 12-14 and 24-26 are not amended and remain in the application. Thus, claims 1-4, 11-14, 19 and 24-26 are pending in the application. Claims 1, 11 and 19 are independent.

Reconsideration of the application and withdrawal of the rejections of the claims are respectfully requested in view of the foregoing amendments and the following remarks.

I. Examiner's Note

In paragraph 5 spanning pages 2 and 3 of the Office Action, the Office suggested that "a storage unit for storing", as recited in claim 11, invokes interpretation under 35 U.S.C. § 112, sixth paragraph, because the recited "storage unit" is a "non-structural term without any structur[al] modifiers." Applicants respectfully submit that the "storage unit" as recited in claim 11 does not invoke 35 U.S.C. § 112, sixth paragraph.

The recited "storage unit" does not use the term "means". It is well-settled that a claim element containing functional features is presumed not to be interpreted under 35 U.S.C. § 112, sixth paragraph, if the claim element does not contain the phrase "means for". In particular, as set forth in M.P.E.P. § 2181, a claim limitation will be presumed to invoke 35 U.S.C. § 112, sixth paragraph, if it meets the following 3-prong analysis:

- (A) the claim limitations must use the phrase "means for" or "step for;"
- (B) the "means for" or "step for" must be modified by functional language; and
- (C) the phrase "means for" or "step for" must not be modified by sufficient structure, material, or acts for achieving the specified function.

M.P.E.P. § 2181 further clarifies that with respect to the first prong of this analysis, a claim element that does not include the phrase "means for" or "step for" will not be considered to invoke 35 U.S.C. § 112, sixth paragraph. See, e.g., *Watts v. XL Systems, Inc.*, 232 F.3d 877, 56 USPQ2d 1836 (Fed. Cir. 2000).

Accordingly, Applicants respectfully submit that the phrase "storage unit" in claim 11 does not invoke 35 U.S.C. § 112, sixth paragraph.

The phrase "storage unit" in claim 11 recites a structural feature. With reference to Figures 1 and 2, paragraphs [0021]-[0026] on pages 6 and 7 provide several examples of such a structural storage unit, e.g., ROM 202, RAM 203 and hard disk drive 204 of a computer 200.

Accordingly, for at least the foregoing reasons, Applicants respectfully submit that the phrase "storage unit" as recited in claim 11 does not invoke 35 U.S.C. § 112, sixth paragraph, and that the "storage unit" is a structural feature.

II. Objections to the Specification

The Office objected to the specification on the basis that the phrase "the preset list being exhaustively inclusive of every program which is authorized to be run on said controlling apparatus", as recited in claims 1, 11 and 19, lacks antecedent basis in the specification. This objection is respectfully traversed.

The Office appears to be relying on an in haec verba (word for word) requirement for determining whether the specification provides antecedent basis for a claimed feature. Contrary to the Office's assertion, Applicants respectfully submit that the specification fully supports and provides antecedent basis for the above-quoted phrase.

For the Office's convenience, a description of disclosed embodiments of the present disclosure is provided below to demonstrate that the specification and drawings fully support and provide antecedent basis for the phrase "the preset list being exhaustively inclusive of every program which is authorized to be run on said controlling apparatus", as recited in claims 1, 11 and 19.

An exemplary embodiment of the present disclosure provides a method and computer program for causing a controlling apparatus intended to control an image forming apparatus, as well as a controlling apparatus for controlling an image forming apparatus. An exemplary configuration of the controlling apparatus is illustrated in Figure 1, in which a computer 200 is limited to controlling an image forming apparatus such as copying machine 300 (see paragraph [0023] on page 7 and paragraphs [0073]-[0074] on pages 22-23 of the specification).

As illustrated in Figure 3, a hard disk 204 of the computer 200 (e.g., controlling apparatus) includes a database 240 in which a file list 241 and running program status list 242 are stored. The file list 241 is a list of all files, such as programs, which are required to exist in a specific storage area of a logical drive of hard disk 204 for controlling a multifunctional peripheral (MFP) 100 (e.g., image forming apparatus) that includes the computer 200 and copying/scanning machine 300 (see, e.g., paragraph [0039]). The running program status list 242 is a list of all programs that can be run on the MFP 100 for controlling the MFP 100 (see, e.g., paragraph [0076]). As described in paragraph [0041] on page 11, the file list 241 and running program status list 242 are set up prior to factory shipment of MFP 100 and the controlling apparatus, and are stored in the hard disk 204 of the controlling apparatus. Accordingly, the file list 241 and the running program status list 242 are preset lists of programs and files that are authorized to be run on the controlling apparatus to control the image forming apparatus, such as the copying/scanning machine 300 illustrated in Figure 1, for example.

As noted above, exemplary embodiments of the present disclosure provide that function of the controlling apparatus (e.g., computer 200) is limited to controlling the image forming apparatus 100. Therefore, in contrast to a general-purpose computer which enables a user to add, modify or remove programs at will for various purposes, the preset list of programs in the file list 241 are the only programs which are authorized to be run on the controlling apparatus to control the image forming apparatus. Consequently, if a program is not included in the preset list of programs which are authorized to be run on the controlling apparatus, then that program is, without exception, not permitted to be run on the controlling apparatus.

Therefore, the specification and drawings provide clear support and antecedent basis for the phrase "the preset list being exhaustively inclusive of every program which is authorized to be run on said controlling apparatus", as recited in claims 1, 11 and 19.

Accordingly, Applicants respectfully request that the objection to the specification be withdrawn.

III. Rejections Under 35 U.S.C. § 103

Claims 1-3, 11-13, 19 and 24-25 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Eibach et al., (U.S. Patent No. 7,356,832, hereinafter "Eibach"), in view of Radatti (U.S. Publication No. 2003/0140049) and further in view of Motoyama et al. (U.S. Patent No. 7,743,133, hereinafter "Motoyama").

As noted above, an exemplary embodiment of the present disclosure provides that a preset list (e.g., running program status list 242) of programs that are authorized to be run on the controlling apparatus (e.g., computer 200) to control the image forming apparatus (e.g., MFP 100) is stored. This list is exhaustively inclusive of every program which is authorized to be run on the controlling apparatus, such that each program not included in this list is judged, without exception, to be an illegal file resulting from computer infection (see, e.g., paragraphs [0074] and [0077]-[0078] on pages 22-24 of the specification).

Furthermore, the disclosed embodiment provides that controlling apparatus (e.g., computer 200) includes a running program status scan 223 which confirms each program actively running on the computer 200. In addition, the disclosed embodiment provides that if a program whose running state has been confirmed is not included in the preset list of programs which are authorized to be run on the controlling apparatus, then that program is, without exception, inhibited from being run on the controlling apparatus. Accordingly, the disclosed embodiment provides that every program that is judged to be an illegal program is inhibited from being run on the controlling apparatus.

When a computer virus infiltrates into a computer, the virus often creates a new program and/or file. In the case of a general-purpose computing device, the number of programs and files that can be run is not limited to a preset list, due to the desire to allow users to add new programs or files and modify or delete existing programs or files. For example, general purpose computing devices are configured to allow users to add software programs containing executable and non-executable files, and add new non-executable files, such as a word processing document, for example. Therefore, conventional virus detection systems seek to compare a file against files that are known to be created by known viruses.

On the other hand, according to the embodiments of the present disclosure, since the preset list of programs represents a limited number of programs that are authorized be run on the controlling apparatus to control the image forming apparatus, the detection of a program that is not included in the preset list is judged to be an illegal program resulting from a computer virus infection. This judgment can be carried out because a limited number of programs that are authorized to be run on the controlling apparatus are stored in the preset list of programs.

These features of the claimed invention would be disadvantageous to the functions and purpose of a general-purpose computer. In particular, limiting a general-purpose computer to a preset list of programs would defeat the purpose of permitting a user to create, add and modify files and programs on the general-purpose computer. On the contrary, general-purpose computers are designed to allow dynamic modifications. Consequently, virus detection and prevention systems for general-purpose computers detect programs do not judge a file or program that is not included in a list of authorized programs or files to be an illegal program resulting from a computer virus, because such a system would severely limit the functionality of a general-purpose computer in allowing its user to create, add and/or modify existing files with the general-purpose computer.

Independent claims 1, 11 and 19 recite various features of the above-described exemplary embodiment.

For instance, claim 1 recites the step of (1) storing a preset list of programs that are authorized to be run on the controlling apparatus to control the image forming apparatus, where the preset list is exhaustively inclusive of every program which is authorized to be run on the controlling apparatus. In addition, claim 1 recites that (2) the controlling apparatus confirms each program actively running on the controlling apparatus. Furthermore, claim 1 recites that (3) the controlling apparatus judges each program, which is not included in the preset list of programs that are authorized to be run to control the image forming apparatus among programs whose active running states have been confirmed, as an illegal program resulting from a computer virus infection. In addition, claim 1 recites that (4) the controlling apparatus automatically inhibits every program that is judged to be an illegal program from being run on the controlling apparatus.

Claim 11 recites a controlling apparatus that comprises a processor configured to execute features corresponding to the above-described features (1)-(4) of claim 1. Claim 19 recites a method comprising steps corresponding to features (1)-(4) of claim 1.

The applied references, either individually or in combination, do not disclose or suggest the combination of features (1)-(4) of claims 1, 11 and 19. In particular, none of the applied references disclose or suggest the manner of determining whether a program is an illegal program as recited in claims 1, 11 and 19. Claims 1, 11 and 19 each recite that the controlling apparatus (2) confirms each program actively running on the controlling apparatus, and that (3) the controlling apparatus judges each program, which is not included in the preset list of programs that are authorized to be run to control the image forming apparatus among programs whose active running states have been confirmed, as an illegal program resulting from a computer virus infection.

Eibach discloses a system for providing security for control systems of vehicles which connect to an external network, such as the Internet. The Office alleged that Eibach discloses features (2) and (3) of claims 1, 11 and 19. This assertion is not supportable.

With reference to Figure 1, Eibach discloses that a first processing unit 20 executes a real time operating system 10. A number of real-time application programs 40, which are dedicated to a specific function in the car, such as air conditioning, window controls, etc., and a first gateway software component 50 run on top of the operating system 10 (see Column 3, line 58 to Column 4, line 8). A second processing device 70 of the vehicle executes a second real time operating system 140. The second processing device 70 is connected to a GSM mobile telephone 100 which provides the capability to communicate with external networks 110 such as the Internet. The second processing device 70 also includes a secure gateway component 180 for restricting access to the programs operated by the second processing device 70 and the programs operated by the first processing device 20 (see Column 4, lines 9-32).

Eibach discloses that when a request originating from outside the vehicle is received to change any data or code in the vehicle, or to execute any code affecting

one of the vehicle's internal device control units, the gateway component 180 subjects the request to two security barriers. First, the gateway controller 80 performs an authentication 220 to determine whether the request originating from outside the vehicle is from an authorized party by using signature matching and then comparing the identity of the requesting party to a list of authorized requesters (see Column 5, lines 11-43). Eibach discloses that if it is determined that the request originated from an authorized party, then the gateway component 180 checks the content of the request originating from outside the vehicle. In particular, the gateway component 180 compares the request to a list of permitted operations. All request messages which are not defined during static configuration of the operating system 20 of the first processing device 20 are denied (see Column 5, line .

Accordingly, Eibach determines whether a request originating from outside the vehicle is permitted to be executed in the vehicle based on the above-described (1) requesting party authentication and (2) the comparison of the request to a list of permitted operations.

Accordingly, the security protocol of Eibach is to monitor a request before permitting a program to be executed. However, in contrast to claims 1, 11 and 19, Eibach does not disclose or suggest that either the first or second processing units 20, 70 confirm each program actively running on the respective processing units. On the contrary, Eibach merely discloses a technique of comparing a request to access programs in the vehicle to a list of authorized requests before permitting a program to be executed. This is markedly different from confirming each program actively running in the processing units.

Therefore, Eibach does not disclose or suggest (2) confirming each program actively running on the controlling apparatus, as recited in claims 1, 11 and 19.

By failing to disclose or suggest feature (2) of claims 1, 11 and 19, Eibach also cannot disclose or suggest features (3) and (4) of claims 1, 11 and 19, which are dependent on the result of feature (2).

Radatti discloses a technique of detecting computer viruses by comparing hash values created for known viruses to a list of viruses, and/or by detecting files which are present but which were not present prior to the virus check. However,

similar to Eibach, Radatti also does not disclose or suggest features (1)-(4) of claims 1, 11 and 19. In particular, Radatti just monitors computer programs themselves

Motoyama also does not disclose, suggest or contemplate features (1)-(4) of claims 1, 11 and 19.

Accordingly, for at least the foregoing reasons, Applicant respectfully submits that claims 1, 11 and 19 are patentable over Eibach, Radatti and Motoyama, since these references, either individually or in combination, fail to disclose or suggest features (1)-(4) of claims 1, 11 and 19.

Moreover, Applicants respectfully submit that the system of Eibach is inapplicable to the claimed invention, and that it would not have been obvious to modify Eibach to arrive at the features of the claimed invention. While Eibach is concerned with restricting access to a vehicle's programs to only those requests which are preauthorized, such a system of authorizing requests would not work under a situation where the request itself is qualified but the program executed by the request is illegally modified and produces an illegal program. As noted above, the controlling apparatus of the claimed invention has a limited function of controlling the image forming apparatus. Therefore, the system of Eibach is different in both purpose and effect, because it would not be suitable for the controlling apparatus of the claimed invention. In particular, the system of Eibach would not prevent a qualified request from being illegally modified and controlling the operation of the controlling apparatus of the claimed invention.

Therefore, Applicants respectfully submit that, in addition to failing to disclose or suggest features (1)-(4) of claims 1, 11 and 19, it would not have been obvious to modify Eibach, Radatti and Motoyama in the manner proposed by the Office to arrive at the claimed invention.

Accordingly, for at least the foregoing reasons, Applicants respectfully submit that claims 1, 11 and 19 are patentable over Eibach, Radatti and Motoyama.

B. Dependent claims 4, 14 and 26 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Eibach, Radatti and Motoyama and further in view of Cozza (U.S. 5,649,095).

Similar to Eibach, Radatti and Motoyama, Cozza also fails to disclose or suggest features (1)-(4) of claims 1, 11 and 19. Consequently, Cozza cannot cure the deficiencies of Eibach, Radatti and Motoyama for failing to disclose or suggest each and every recited feature of claims 1, 11 and 19.

Therefore, Applicants respectfully submit that claims 1, 11 and 19, as well as claims 2-4, 12-14 and 24-26, are patentable over Eibach, Radatti, Motoyama and Cozza.

Dependent claims 2-4, 12-14 and 24-26 recite further distinguishing features over the applied references, and are also patentable by virtue of depending from claims 1, 11 and 19. The foregoing explanation of the patentability of claims 1, 11 and 19 is sufficiently clear such that it is believed to be unnecessary to separately demonstrate the additional patentable features of the dependent claims at this time. However, Applicant reserves the right to do so should it become appropriate.

IV. Conclusion

In view of the foregoing amendments and remarks, it is respectfully submitted that the present application is clearly in condition for allowance. Accordingly, a favorable examination and consideration of the instant application are respectfully requested.

If, after reviewing this Amendment, the Examiner believes there are any issues remaining which must be resolved before the application can be passed to issue, the Examiner is respectfully requested to contact the undersigned by telephone in order to resolve such issues.

Respectfully submitted,

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